



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,900	04/13/2004	Brian D. Shaffer	8540G-000221	4004

  

27572	7590	10/17/2007
HARNES, DICKEY & PIERCE, P.L.C.		
P.O. BOX 828		
BLOOMFIELD HILLS, MI 48303		

  

EXAMINER	
WILLS, MONIQUE M	

  

ART UNIT	PAPER NUMBER
1795	

  

MAIL DATE	DELIVERY MODE
10/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/822,900	<b>Applicant(s)</b> SHAFFER ET AL.	
	<b>Examiner</b> Monique M. Wills	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election without traverse of Group I claims 1-21 in the reply filed on August 1, 2007 is acknowledged. Claims 22-30 have been cancelled.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horgan et al. U.S. Pub. 2004/0253489.

Horgan teaches a method of operating a fuel cell system having a fuel cell stack, wherein the method comprises: producing a power output with the fuel cell stack to meet a power demand placed on the fuel cell system; detecting a

Art Unit: 1795

decrease in the power demand and routing the excess power output to a battery component of the fuel cell system. See paragraph 65.

Horgan does not expressly disclose reducing the power output of the fuel cell stack to meet the decreased power demand place don the fuel cell system. Horgan does not expressly disclose concurrently routing the excess power and reducing power output from the fuel cell.

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to reduce the power from the fuel cell to the load, in order to conserve energy internal system needs.

With respect to claim 11, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to concurrently rout excess power and reduce power output from the fuel cell to the load, in order to efficiently transfer energy from the load to the internal device.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the

Art Unit: 1795

prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3 & 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horgan et al. U.S. Pub. 2004/0253489 in view of Gurin et al. U.S. Pub. 2005/0100777.

Horgan teaches a method of operating a fuel cell system having a fuel cell stack, wherein the method comprises: producing a power output with the fuel cell stack to meet a power demand placed on the fuel cell system; detecting a decrease in the power demand and routing the excess power output to a battery component of the fuel cell system. See paragraph 65.

Horgan does not expressly disclose routing the power output to a coolant pump motor.

However, Gurin teaches that it is well known in the art to use power output of fuel cells for internal needs of the system including coolant pump motors. See paragraph 73.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to route excess power of the fuel cell of Horgan to satisfy power demands of the coolant pump, as taught by Gurin, in order to satisfy internal needs of the fuel cell system.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10, 12-13, 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horgan et al. U.S. Pub. 2004/0253489 in view of Gurin et al. U.S. Pub. 2005/0100777 in view of Sakai U.S. Pub. 2006/0035120.

Horgan teaches a method of operating a fuel cell system having a fuel cell stack, wherein the method comprises: producing a power output with the fuel cell stack to meet a power demand placed on the fuel cell system; detecting a decrease in the power demand and routing the excess power output to a battery component of the fuel cell system. See paragraph 65.

Horgan does not expressly disclose, routing excess power to the radiator fan motor, a heater or maintaining relative humidity of the fuel cell stack.

However, Sakai teaches that it is well known in the art to employ excess fuel cell power to satisfy ancillary machinery, such as heaters. See paragraph

Art Unit: 1795

62. Sakai also teaches the importance of regulating the humidity of the fuel cell and pressure variations in order to optimize electrical output. See paragraph 33.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the excess fuel cell power to the heater or a radiator of Horgan, as taught by Sakai in order to satisfy internal load demands.

With respect to the humidity and pressure variations, it would have been obvious to employ the regulating method of Sakai to monitor the humidity and pressure variations of the fuel cell of Horgan, in order to optimize electrical output.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday, from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax

Art Unit: 1795

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEPHEN KALAFUT  
PRIMARY EXAMINER  
GROUP 1700



MW

10/15/07